

BUSHFIRE ASSESSMENT REPORT

Subdivision of Lot 44 DP1117263 349 McFarlanes
Road, Berry Park NSW 2321.

Lezette Garry
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Table 1 – Document Version and Disclaimer

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No:	Reference:	Author:	Reviewer:
Version 1	22/02/24_BAR_349 McFarlanes Rd_V1	lezette	KW
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<p>Charitable Donation:</p> <p>Please note that a donation of \$10.00 will be made by Perception Planning to the NSW Rural Fire Service. The donation is made at the end of the financial year and is intended to assist the NSW RFS with community activities.</p>			

EXECUTIVE SUMMARY

A Bushfire Assessment Report (BAR) has been prepared by Hunter Valley Bushfire Consulting Services at the request of Perception Planning to assess compliance with the document, Planning for Bushfire Protection (PBP 2019) for a twenty-nine (29) lot subdivision at Lot 44 DP1117263, 349 McFarlanes Road, Berry Park NSW 2321.

The report forms part of the supporting documentation for a Development Application (DA) to be submitted to Maitland City Council (MCC). The proposed development is classified as Integrated Development under the provisions of Planning for Bushfire Protection (PBP) (NSW Rural Fire Service (RFS), 2019), and is therefore required under the legislation to be referred to the commissioner of the RFS, for the issue of a Bushfire Safety Authority. The report demonstrates compliance with PBP (RFS, 2019) and AS3959-2018 Construction of Buildings in Bush Fire Prone Areas.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided regarding fuel management, access, provision of emergency services, building protection and construction standards, to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

- APZs are required to be implemented for the subdivision in accordance with Table 4-1 of this report and Figure 8 in the appendix
- Assessment in accordance with AS3959 2018 and the PBP 2019 (section 4 of this report) has shown that future dwellings within the lots will be able to comply with the required minimum BAL29. In any case, future dwellings within the site will be assessed under Section 4.14 of EP&A Act for each individual dwelling upon application.
- Reticulated water is being extended into the site. The development will be linked to the water pressure mains. The proposed internal fire hydrant spacing, sizing and pressures are to comply with AS 2419.1-2005 Fire Hydrant Installations
- Access to all lots is to comply with the acceptable criteria as listed in Table 5.3b of the document Planning for Bushfire Protection 2019 and the Table in Section 5.3 of this report.
- The installation of Electricity and Gas (if applicable) is subject to compliance with the Acceptable Criteria as listed in Table 5.3c of the document, Planning for Bushfire Protection 2019 and Table in Sections 5.5 and 5.6 of this report.

INTRODUCTION

The purpose of this report is to assess the compliance of a twenty-nine (29) lot subdivision at Lot 44 DP1117263 349 McFarlanes Rd, Berry Park NSW 2321 with the provisions of PBP 2019.

1. LOT INFORMATION

Address: (Lot 44 DP1117263) 349 McFarlanes Rd, Berry Park NSW 2321

Proposal: The proposal is for a twenty-nine (29) - lot subdivision (refer to Figure 1, Plans in Appendix).

Area: Total area of Lot 44 is ha

Council: Maitland

Zoning: R1 general residential; RU2 Rural Landscape; C2 Environmental Conservation

Bushfire Prone Land: yes - Category 3 vegetation (refer to Map Figure 3 in Appendix).

RFS Region: Lower Hunter

Is a Bushfire Safety Authority (BFSA) required? Yes

Significant Environmental Features: Flooding and C2 Environmental Conservation Zone

Threatened Species: No items shown on mapping checked on SEED Portal 24/2/2022.

Aboriginal Objects: No objects mapped– Basic Search completed on AHIMS website 10/12/2021.

Registered Fire Trails: there are no NSWRFs registered fire trails in the area – website checked 24/2/2022

2. SPECIFIC OBJECTIVES

2.1 Compliance with the Specific Objectives in Clause 5.2 of the PBP 2019.

Specific Objective	Compliance	Comments
Minimise perimeters of the subdivision exposed to the bushfire hazard (hourglass shapes which maximise perimeters and create bottlenecks should be avoided).	Able to comply	Subject plan shows compliance. An additional 25m APZ has been added to achieve compliance for proposed Lots 14 &15.
Minimise vegetated corridors that permit the passage of bushfire towards buildings.	Able to comply	No vegetated corridors
Provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests.	Able to comply	No ridge tops or steep slopes.
Ensure that APZ's between a bushfire hazard and future dwellings are effectively designed to address the relevant bushfire attack mechanisms.	Able to comply	APZs comply with Table A1.12.2 in PBP 2019. An additional 25m APZ has been added to Lot 29 to achieve compliance for Lots 14 and 15.
Ensure the ongoing maintenance of APZ's.	Able to comply	An 88B instrument should be provided.

Provide access to hazard vegetation to facilitate bushfire mitigation works and fire suppression	Able to comply	Internal access within the individual lots can be provided
Provide adequate access from all properties to the wider road network for residents and emergency services	Able to comply	Compliant access to/from the individual lots can be provided
Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.	Able to comply	a reticulated water supply is provided.

3. METHODOLOGY

The Australian Standard for assessing the BAL and providing the detailed requirements for construction has been reviewed and amended with the latest version being adopted for use in bushfire prone areas of NSW in March 2020. This version is titled AS 3959-2018 'Construction of Buildings in Bushfire Prone Areas' (standards Australia 2018, was used in this assessment.

In addition, the NSW method of determining the bushfire attack level, found in Appendix 1 of the document 'Planning for Bushfire Protection 2019' (NSW Rural Fire Service 2019) has also been reviewed and amended to come into line with the process within AS 3959. Therefore, in NSW the methodology with AS 3959 is to be used to determine the bushfire attack level. AS3959 (2018) Appendix A – Method 1 has been used in this BAL assessment.

3.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent.
- Confirmation of the vegetation present via a site inspection conducted on 15/2/2022.

3.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 10m.
- Confirmation of the slope present via a site inspection conducted on 15/2/2022.

4. SITE ASSESSMENT

4.1 Asset Protection Zone (APZ) Assessment of Table A1.12.2, PBP 2019 – residential subdivision. FFDI 100 (Maitland LGA). (Refer to Maps Figure 7&8 in the Appendix).

Direction from site	Vegetation type within 140m of subdivision boundaries.	Effective slope of vegetated land(degrees)	Required minimum distance for APZ
north	grassland	downslope	12m
west	grassland	downslope	12m
east	grassland	upslope	10m
south	Managed Land	upslope	–

4.2 Building Attack Level's (BAL's) Table A1.12.5 PBP 2019. (Refer to Figure 7 Map in the Appendix)

Vegetation type	Slope of land under vegetation type	Separation distance from vegetation type	Bushfire attack level
Grassland	Flat/upslope	10 - <15m	BAL29
		15 - <22m	BAL19
		22 - < 50m	BAL12.5
Grassland	Downslope 0-5 degrees	12 - <17m	BAL29
		17 - <25m	BAL19
		25 - <50m	BAL12.5

Photo 1. Looking north of the proposed subdivision along McFarlanes Rd
(Source: HVBCS-author,15/2/2022)



Photo 2. Looking at the southern connection of the existing to proposed
Subdivision (Source: HVBCS- author, 15/2/2022)



Photo 3. Looking west from proposed Subdivision
(Source: HVBCS-author, 15/2/2022)



Photo 4. Looking east of the proposed subdivision.
(Source: HVBCS-author, 15/2/2022)



5. BUSHFIRE PROTECTION MEASURES

5.1 APZ's and Compliance with Table 5.3a of the PBP 2019. (Refer to Maps Figures 7 & 8 in Appendix)

Performance Criteria	Acceptable Solutions	Compliance	Comments
Potential building footprints must not be exposed to radiant heat levels exceeding 29kW/m ² on each proposed lot.	APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI	Able to comply	The proposed subdivision can comply with the APZs as listed in Table A1.12.2. PBP 2019. A 25m APZ has been applied to Lot 29 in order to achieve compliance for Lots 14,15 and 16. Refer to Table 4.1 above for these.
APZ's are managed and maintained to prevent the spread of fire towards the building.	APZs are managed in accordance with the requirements of Appendix 4	Able to comply	This requirement is to be the subject of an 88B instrument.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	APZs are wholly within the boundaries of the development site	Able to comply	Maintenance of the APZs is to be subject to an 88B instrument. No trees exist for crown fires. Slope is not creating soil instability.
The APZ's is provided in perpetuity	APZs are located on lands with a slope less than 18degrees	Able to comply	The presence of an APZ provided in perpetuity is to be the subject to an 88B instrument.

5. 2 Landscaping and Compliance with Table 5.3a of the PBP 2019.

Performance Criteria	Acceptable Solutions	Compliance	Comments
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings and the potential for wind driven embers to cause ignitions	Landscaping is in accordance with Appendix 4; and Fencing is constructed in accordance with section 7.6	Able to comply	Fencing and landscaping of individual lots will be considered at dwelling DA stage however the features of the subdivision do not pose any problem with compliance. Subdivision/ street landscaping is capable of complying with these requirements – recommendation listed below.

5.3. Access and compliance with table 5.3b of the PBP 2019

Performance Criteria	Acceptable Solutions	Compliance	Comments
<p><u>General access requirements</u> - Fire Fighting Vehicles are provided with safe all-weather access to structures</p>	property access roads are two-wheel drive, all-weather roads.	Able to comply	Access details for the development show compliance.
	perimeter roads are provided for residential subdivisions of three or more allotments.	Able to comply	Meadowhawke St is a perimeter road – located between hazard and proposed lots 25 – 28 to the west of the subdivision.
	subdivisions of three or more allotments have more than one access in and out of the development.	Able to comply	The two internal roads Red Baron Rd and Meadowhawke St are extensions of an existing subdivision. These roads provide access/egress to/from the proposed lots in the 29- lot subdivision.
	traffic management devices are constructed to not prohibit access by emergency services vehicles;	Able to comply	There are no traffic management devices proposed. Proposed grades comply. Refer to Civil drawing in Figure 2 of Appendix

	<p>maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient; all roads are through roads.</p> <p>dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end.</p>	<p>Does not comply</p>	<p>The extension of both Meadowhawke St and Red Baron Rd are no through roads from the north of existing Relict St. These form the main part of this proposed subdivision.</p> <p>Red Baron Rd from the north of Relict Street is collectively greater than 200m in length. On its own as a part of this subdivision application only it complies with the requirement <200m. The cul -de - sac does not appear to have a 12m outer radius. Turning path details are provided in Figure 2 of Appendix. The significant vegetation in this assessment is grassland and at the end of both streets is 0-5 degrees downslope. An additional bushfire measure has been added to the subdivision design. A 25m APZ has been applied to the north of both streets. Water hydrants are available in both streets as well as in McFarlanes Rd.</p>
	<p>where kerb and guttering are provided on perimeter roads, roll top kerbing should be used to the hazard side of the road.</p>	<p>Able to comply</p>	<p>Noted. Engineering details for the subdivision show rolled kerb. Refer to Figure 2 of Appendix.</p>
	<p>where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the</p>	<p>Able to comply</p>	<p>No forest or woodland vegetation is present. Only grassland.</p>

	<p>existing public road system.</p> <p>and one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression</p>	Not applicable	There are no one way roads proposed for this subdivision.
<p><u>General access requirements</u> - the capacity of access roads is adequate for fire fighting vehicles</p>	<p>the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes).</p> <p>bridges/causeways are to clearly indicate load rating.</p>	Able to comply	Civil construction details for the proposal in Figure 2 of the Appendix show compliance.
<p><u>General access requirements</u> - There is appropriate access to water supply</p>	<p>hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression.</p> <p>hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - Fire hydrant installations System design, installation, and commissioning.</p> <p>there is suitable access for a Category 1 fire appliance to within</p>	<p>Able to comply</p> <p>Able to comply</p> <p>Able to comply</p>	<p>Reticulated water supply to be provided. Recommendation to be placed at end of report.</p> <p>Refer to recommendation listed below.</p> <p>Subject to the recommendation discussed above, the proposed subdivision should comply with this provision.</p>

	4m of the static water supply where no reticulated supply is available.		
<p><u>Perimeter Access</u> - roads are designed to allow safe access and egress for fire fighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency personnel during firefighting and emergency management on the interface</p>	are two way sealed roads; minimum 8m carriageway width kerb to kerb.	Able to comply	Refer to Cross section provided in Figure 2 of appendix. The subdivision complies.
	parking is provided outside of the carriageway width.	Able to comply	On site carparking is provided to each lot.
	hydrants are located clear of parking areas; are through roads, and these are linked to the internal road system at an interval of no greater than 500m.	Able to Comply	The location of hydrants provisions is listed as a recommendation below.
	curves of roads have a minimum inner radius of 6m.	Able to comply	Turning path details are provided in Figure 2 of the appendix.
	the maximum grade road is 15 degrees and average grade of not more than 10 degrees.	Able to comply	Grades of roads are provided in the cross - section details provided in Figure 2 of the appendix.
	the road crossfall does not exceed 3 degrees; and	Able to comply	These details are provided in the cross section listed in Figure 2 of the appendix
	a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	Able to comply	Street planting details are provided in Figure 2 of the appendix.
<p><u>Non-Perimeter</u> - Access roads are designed to allow safe access and egress for firefighting</p>	<p>minimum 5.5m carriageway width kerb to kerb.</p> <p>parking is provided outside of the carriageway width; hydrants are</p>	<p>Able to comply</p> <p>Able to comply</p>	<p>Red Baron Rd is 8m in width see cross section detail in Figure 2 appendix.</p> <p>Off street- car parking is provided with each lot.</p> <p>The location of hydrants is addressed by the recommendation listed below.</p>

	<p>minimum 4m carriageway width; in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay.</p> <p>a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches.</p> <p>provide a suitable turning area in accordance with Appendix 3.</p> <p>curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress.</p> <p>the minimum distance between inner and outer curves is 6m.</p> <p>the crossfall is not more than 10 degrees.</p> <p>maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and</p> <p>a development comprising more than three</p>	<p>Able to comply</p> <p>Able to comply</p> <p>Able to comply</p> <p>Able to comply</p> <p>Able to comply</p> <p>Able to comply</p> <p>Able to comply</p>	<p>See street cross section detail provided in Figure 2 of the Appendix.</p> <p>See street cross section detail provided in Figure 2 of the Appendix</p> <p>See street cross section detail provided in Figure 2 of the Appendix</p> <p>See street cross section detail provided in Figure 2 of the Appendix</p> <p>Refer to subdivision plans in Figure 1 of the appendix</p>
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	<p>dwelling has access by dedication of a road and not by right of way.</p> <p>Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.</p>		
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5.4. Water supply and compliance with Table 5.3c of PBP 2019

Performance Criteria	Acceptable Solutions	Compliance	Comments
Adequate water supplies are provided for firefighting purposes	<p>reticulated water is to be provided to the development where available.</p> <p>a static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed; and</p> <p>static water supplies shall comply with Table 5.3d</p>	Able to comply	It appears that the development will have a reticulated water supply available.
Water supplies are located at regular intervals; and The water supply is accessible and reliable for firefighting operations	<p>fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2005.</p> <p>hydrants are not located within any road carriageway; and</p>	Able to comply	The proposal is within an urban area. Compliance should be able to be achieved.

	reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.		
Flows and pressure are appropriate	fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005	Able to comply	Noted – compliance should be able to be achieved.
The integrity of the water supply is maintained.	all above-ground water service pipes are metal, including and up to any taps; and above-ground water storage tanks shall be of concrete or metal.	Able to comply	Noted – compliance should be able to be achieved.

5.5. Electricity and Compliance with Table 5.3c of the PBP 2019

Performance Criteria	Acceptable solutions	compliance	Comments
Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of the buildings	<p>where practicable, electrical transmission lines are underground.</p> <p>where overhead, electrical transmission lines are proposed as follows:</p> <p>lines are installed with short pole spacing of 30m, unless crossing gullies, gorges, or riparian areas; and no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines</p>	Able to comply	compliance with this requirement should be able to be achieved – there is no impediment for compliance.

5.6. Gas and compliance with Table 5.3c of the PBP 2019

Performance criteria	Acceptable solutions	compliance	Comments
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of the buildings	reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used.	Able to comply	There is no mention of a proposal for the installation of gas however there is no impediment to compliance with this requirement.

	<p>all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.</p> <p>connections to and from gas cylinders are metal; polymer-sheathed flexible gas supply lines are not used; and</p> <p>above-ground gas service pipes are metal, including and up to any outlets.</p>		
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CONCLUSION AND RECOMMENDATIONS.

The twenty-nine (29) lot subdivision can comply with the provisions of Section 5 – Residential and Rural Residential Subdivisions, of the document, Planning for Bushfire Protection (RFS,2019). Subject to the required APZ distances (listed in Table 4.1 above and shown on Maps Figure 7&8 in the Appendix) any future dwellings are capable of being located on proposed Lots where a maximum BAL29 construction level will apply. It is recommended that: -

- APZs are required to be implemented for the subdivision in accordance with Table 4-1 and Maps Figure 7&8 in the appendix.
- Assessment in accordance with AS3959 and the PBP (sections 4 of this report) has shown that future dwellings within the lots will be able to comply with the required BALs. In any case, future dwellings within the site will be assessed under Section 4.14 of EP&A Act for each individual dwelling upon application.
- Reticulated water is extended into the site. The development will be linked to the water pressure mains and the proposed internal fire hydrant spacing, sizing and pressures are to comply with AS 2419.1-2005 Fire Hydrant Installations
- Access to all lots is to comply with the acceptable criteria as listed in Table 5.3a below.



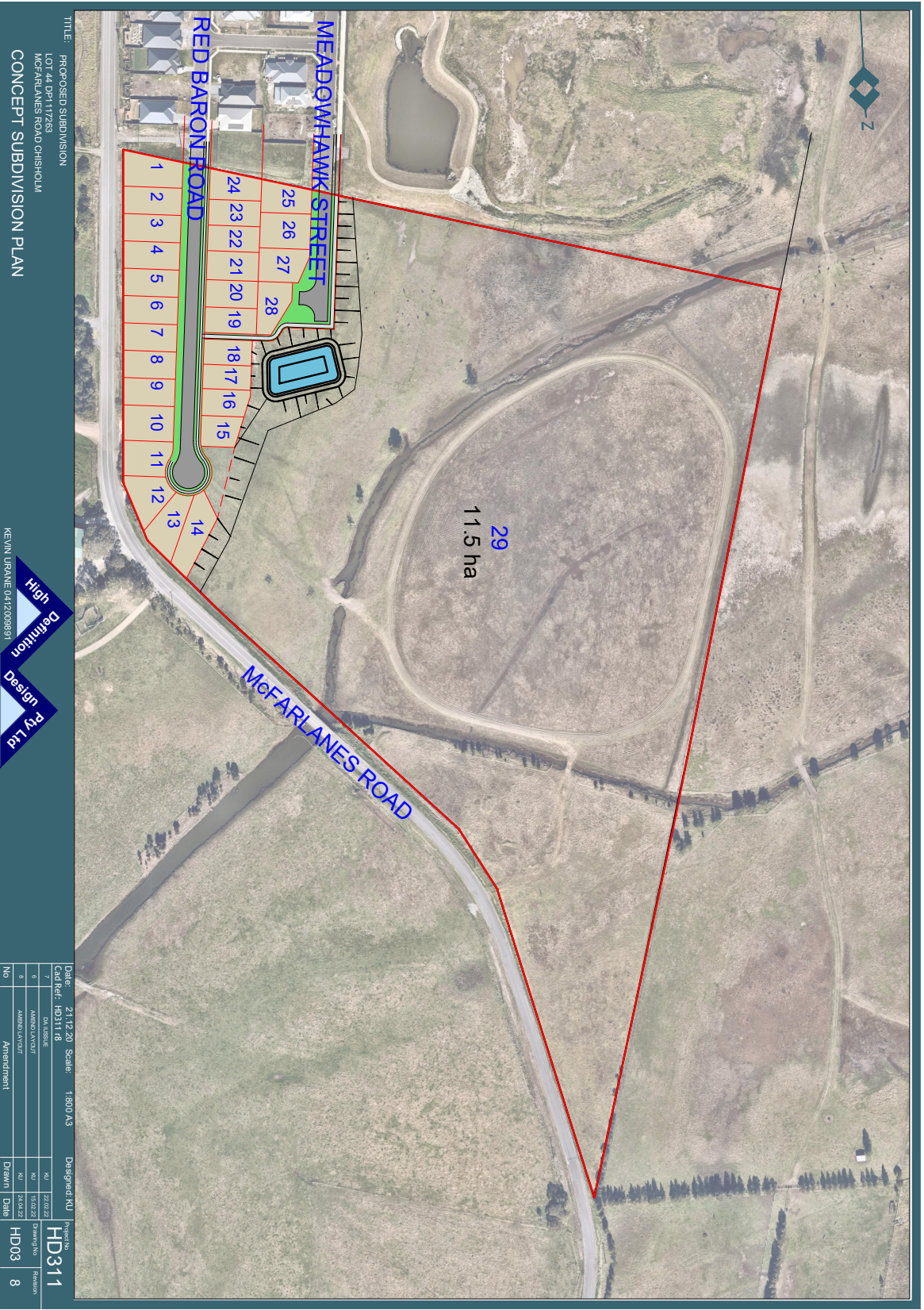
TITLE: PROPOSED SUBDIVISION
 LOT 44 DP 117263
 MCFARLANES ROAD CHISHOLM
 CONCEPT SUBDIVISION PLAN

KEVIN URBANE 041209891

High Definition Design Pty Ltd

Date	Scale	Project No.
24.12.20	1:1000 A3	HD311
24.12.20		
24.12.20		
24.12.20		

No.	Amendment	Drawn	Date	Reviewed
8				
7				
6				
5				
4				
3				
2				
1				



TITLE: PROPOSED SUBDIVISION
 LOT 44 DP1 117263
 MCFARLANES ROAD CHISHOLM
 CONCEPT SUBDIVISION PLAN

KEVIN URBANE 0412009891

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No	Date	By	Description	Drawn	Date	Revision
1	21.12.20	KAU	Scale: 1:800 AS	KAU	22.02.21	HD311
2		KAU	Code Ref: HD311.6	KAU	16.02.21	
3		KAU	AMENDMENT	KAU	24.04.21	
4		KAU	AMENDMENT	KAU		HD03
5		KAU	AMENDMENT	KAU		8

Maps.

